

Adivasi Women

ENGAGING WITH CLIMATE CHANGE



Adivasi Women

ENGAGING WITH CLIMATE CHANGE

Govind Kelkar

UNIFEM South Asia Office
D-53 Defence Colony
New Delhi 110024



Copyright © United Nations Development Fund for Women

ISBN: 1-932827-83-8

June, 2009

The views expressed in this publication are those of the author, and do not necessarily represent the views of UNIFEM, IFAD, The Christensen Fund or any of their affiliated organizations.

Designed & Produced by GENESIS 9810033682

email : genesisadvts@hotmail.com

Contents

Acknowledgements	1
1. Introduction	2
2. Climate Change and Vulnerability of Indigenous Women	4
2.1 Gender Dimensions of Climate Change	
2.2 Vulnerability of Indigenous Women	
3. Restructuring of Indigenous Economies and Gender Relations in Asia	9
3.1 Impact of Privatization and Globalization	
3.2 Non Timber Forest Products	
4. Adivasi/ Indigenous Women's Relationship to Natural Resources: Compounding Challenges	14
4.1 Ownership and Control of Resources	
4.2 Community Decision-Making and Power in the Marketplace	
5. Agriculture: A Lens for Mitigation and Adaptation among Adivasi Women	17
5.1 Adaptation Strategies	
5.2 Autonomous Adaptation	
5.3 Mitigation Measures	
5.4 Summary of Adivasi/ Indigenous Women's Priorities	
6. Conclusion: Recommendations for Climate Agenda	27
7. References	30

Highlighted boxes -

- Impacts on Human Security and Vulnerability of Women
- Gender and Climate Change: Lakshmi from Rajasthan
- Mitigation and Adaptation
- Increased Climate Resiliency from Rural Employment Programme
- Vocations Independent of Climate
- Social Visibility of Chenchu NTFP Collectors



Acknowledgments

This study is supported by UNIFEM through its partnerships with IFAD and the Christensen Fund.

The study benefited greatly from the comments, suggestions and support of Phrang Roy, Antonella Cordone, Joanne Sandler, Socorro Reyes, Anne Stenhammer, Sushma Kapoor, Victoria Tauli-Corpuz, Yianna Lambrou and Dev Nathan, throughout the study period. Pallavi Govindnathan and Chris Revelle added to my perspectives on knowledge and skills of adivasi women. Tracy Raczek and Jennifer Cooper reviewed the study and contributed to clarity and strength of my arguments.

I would like to acknowledge Maria Hartl, Regina Laub and Laura Puletti for their inputs; Harishwar Dayal, Patricia Mukhim and staff of Nav Bharat Jagruti Kendra (NBJK), Ranchi, for arranging field visits and accompanying me to villages in Jharkhand and Meghalaya in India. I also wish to specially thank Semantinee Khot for enabling my visit to the Suzlon wind energy farms in Supa, Maharashtra. Appreciation also of the efforts of Vandna Khurana, Chinnamma Verghese, Sanghmitra Choudhury, Lavinia Mawlong and Dharmendra Singh of UNIFEM South Asia Office, and Hitendra Jain of Genesis who assisted at various stages of this study. The painting on page 11 is by Ganga Devi of Kondagaon village, Chattisgarh and the sculptures by Navjot on page 26 and by Shanti Nag on the back cover are gratefully acknowledged. We appreciate and acknowledge the photographs on pages 6, 8 and 13 by Indian Institute of Natural Resins and Gums, Ranchi.

Finally, and not the least, I extend my gratitude to the adivasi women and men in the several states of the study who willingly shared their livelihood experiences with me.

1

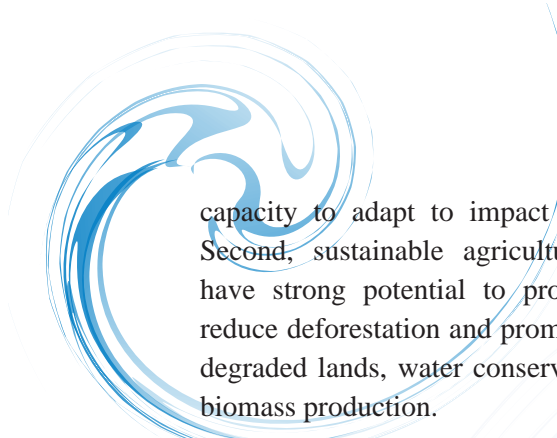
Introduction

Hundreds of millions of indigenous women and men throughout the world, who manage their forests and crops sustainably contribute to the sequestration of greenhouse gas (GHG) from the global atmosphere. Nonetheless, maintaining control over these resources through colonial and corporate attempts to nationalize or privatize them has been a historical struggle. In many areas in Asia, adivasis and indigenous peoples continue to struggle to save their natural resources from deforestation and damaging extraction of minerals, oil and gas, as well as against further expansion of mono-crop plantations. Indigenous communities advocate at various local, regional and international forums to maintain sustainable production and consumption systems (UNPFII, Tauli-Corpus and Lynge, 2008). This effort is arguably as important as ever.

Climate change presents an additional challenge as it further impacts most adivasi and indigenous communities. It is increasing risks of managing natural resources and agricultural productivity on which many indigenous farmers — a significant amount of whom are women—and other rural populations depend (IAASTD, 2009; IFAD, 2009). Many are searching for ways to effectively adapt to erratic rainfall, drought and other projected impacts of global warming along side means to mitigate the cause.

Indigenous peoples' legal control and sustainable use of natural resources in their ancestral domain provide two significant benefits on these adaptation and mitigation fronts. First, legal control and sustainable use of natural resources improve the livelihoods of indigenous peoples, thus increasing their economic resiliency and





capacity to adapt to impact of climate change. Second, sustainable agriculture and forest use have strong potential to provide a GHG sink, reduce deforestation and promote rehabilitation of degraded lands, water conservation and increased biomass production.

The success of sustainable practices by adivasi and indigenous peoples, however, rests in large part on the inclusive relations between community members and the strength of the entire community when faced with external pressures, such as privatization and globalization trends. Gender relations are a critical component of both.

This study aims to decipher the gendered impact of climate change in adivasi/indigenous societies in Asia, and increase understanding of how these are exacerbated by structural shifts in adivasi socio-economic systems resulting from their colonial history, more recent efforts at privatization, and gendered roles within the adivasi communities. In conclusion, policy recommendations are offered for enhancing women's resiliency to this impact.

As sustainable agriculture and harvesting or cultivating of non-timber forest products (NTFPs) are of critical importance to many adivasi people's livelihood, these areas are of particular interest

and the lens through which gender relations are examined. Furthermore they are representative of how socio-economic conditions can influence indigenous women's resiliency to impact of climate change, in particular, due to gender relations—the often unequal placement of women and men in relation to each other, which limit the expression of capabilities and has profound impact on livelihoods. In the case of adivasi women, gender relations impact the sustainable management of natural resources, for example, by the lack of women's right to manage and control land and limited participation in community governance of forests.

Three sources are drawn upon for this study: (1) available materials (both published and unpublished) on gender dimensions of climate change, (2) the author's experience of working with adivasi and indigenous peoples in India, China, and several countries in South East Asia, and (3) field visits during 2006 to 2008 in Mahboobnagar and Visakhapatnam in Andhra Pradesh, Khuti and Ranchi in Jharkhand, Bastar in Chhatisgarh, Supa wind farms in Maharashtra, Kohima in Nagaland, Khasi and Jaintia Hills in Meghalaya, India as well as Mosuo and Naxi areas in Yunnan, China.



2

Climate Change and Vulnerability of Indigenous Women

The United Nations Intergovernmental Panel on Climate Change (UN IPCC) has observed an increase in average global temperature. Greenhouse gas (GHG) emissions due to human activities¹ have increased steadily—70 percent between 1970 and 2004 (IPCC, 2007: 5) and additional studies have highlighted the compounding negative impact of global warming on human livelihoods in the context of the current global food and energy crisis. These include: dwindling crop yields from agriculture and forestry in most tropical and sub-tropical regions; decreased availability of water in many water-scarce regions; desertification and land degradation processes, exacerbated by change in rainfall patterns; rising sea levels affecting, in particular, livelihoods of coastal communities; dwindling natural resource productivity, and in some cases, irreversible loss of biodiversity (Michaelowa, 2001; Lambrou and Piana, 2006; IFAD, 2009).

In recent years attention is increasingly drawn to means for communities to adapt to these impacts, as well as help mitigate them. Studies by the

United Nations International Strategy for Disaster Reduction as well as a 2006 report by Nicholas Stern, for example, assess the major economic impact of climate change and argue for the immediate attention of the international community, stating that the advantages and long-term savings of implementing effective adaptation and disaster risk reduction strategies far outweigh expected costs. The international community has responded to these calls and increasing scientific certainty of global warming, by garnering political will for mitigation and adaptation on multiple fronts.

A central question, however, is who in these communities are the most vulnerable to projected impact?

In discussing the distribution of adverse effects of climate change, the UN IPCC points out, “Those in the weakest economic position are often the most vulnerable to climate change....They tend to have limited adaptive capacities, and are more climate dependant on climate sensitive resources such as local water and food supplies” (IPCC,



¹Human activities including industry, agriculture, deforestation/forest degradation, energy use, transport, residential and commercial building energy use, waste and waste water treatments.

2007:9). In India, the National Action Plan on Climate Change has targeted the protection of “the poor and vulnerable sections” of society through “an inclusive and sustainable development strategy, sensitive to climate change” In China, the government has made efforts to promote education, training and public awareness on climate change impact on agriculture, forests, livestock industry and rural-urban inequality (People's Republic of China: 2007). This linkage between vulnerability, exclusion and inequality can appear self-evident. What is less evident however, are the multiple interdependent causes of vulnerability of women due to inequality in gendered social systems, including among adivasi and indigenous peoples. Further, how do we learn from local adaptation practices and make them work to the benefit of the vulnerable women and men?

Gender-dimensions of climate change

The gender dimension of climate change is gaining visibility as the stakes of climate change become increasingly clear. Post-disaster recovery efforts and economic development programmes have proven that women and men are affected differently by natural hazards and environmental stress because of differences in traditions, resource use patterns, and gender specific roles and responsibilities. Furthermore, gender inequality exacerbates women's vulnerability to adverse

changes in the climate as it limits women's political voice, economic opportunity, health, education, and access to information in particular. These constraints effect virtually every aspect of women's lives, including those related to climate change, leaving poor and elderly women most susceptible.

Drawing examples from disasters in three countries in Africa and Asia (Bangladesh, Ghana and Senegal) a May 2008 study by Women's Environment and Development Organization (WEDO), highlighted the following impacts of climate change on human security and the vulnerability of women.

An additional broad assessment, while not exhaustive, illustrates fundamental ways in which gender inequalities can increase the vulnerability of women when coping with natural disasters and environmental stresses (UNIFEM, 2008: 8-9).

- Rural women are often dependant on the natural environment for their livelihood. Maintenance of households and women's livelihoods are, therefore, directly impacted by climate related damage to or scarcity of natural resources;
- Limited rights or access to arable land further limits livelihood options and exacerbates financial strain on women, especially in women-headed households;

Impacts on human security and vulnerability of women		
C L I M A T E C H A N G E	Impacts on human security	Vulnerability of women
	Crop Failure	Household food provision; increased agricultural work
	Fuel Shortage	Household fuel provision; food-fuel conflicts
	Shortage of Safe, Clean Water	Household water provision; exposure to contaminated sources
	Resource Scarcity	Economic drawbacks; lack of land tenure; resource -dependent livelihoods; school dropouts, early marriage
	Natural Disasters	Greater incidence of mortality; reduction of life expectancy
	Disease	Lack of access to healthcare; increased burden of caring for young, sick and elderly
	Displacement	Loss of livelihoods; lack of adequate shelter; conflicts
	Civil War/ Conflict	Loss of livelihoods and lives; sexual violence and trauma
Source: WEDO, 2008		

- Poor women are less able to purchase technology to adapt to climate change due to limited access to credit and agricultural services (e.g. watering technology, farming implements, climate appropriate seed varieties and fertilizers);
- Damage to infrastructure that limits clean water, hygienic care, and health services can be especially detrimental to pregnant or nursing women (10-15% of all women at any given point) as they have unique nutritional and health needs;
- Public and familial distribution of food may be influenced by gender and make women and girls more susceptible to poor nutrition, disease and famine, especially when communities are under environmental stress;



- Increased time to collect water (due to drought, desertification or increased salinity) and fuel (due to deforestation or extensive forest kill from disease infestations) decreases time that women can spend on education or other economic and political enterprises, and increase their risk of gender-based violence.

Gender and Climate Change: Lakshmi from Rajasthan

Alluding to gender dimensions of climate change at the village level, a recent UNDP (Delhi) poster 'Countering Climate Change' carries the statement of 25-year-old Lakshmi from Rajasthan and reflects the interdependency between women's empowerment and climate.

"Rainfall is erratic — it is sometimes less and sometimes more. So the crop is not good and the food is not sufficient. To earn more, men have to work at the factory and we (women) have to work very hard both in the house and the fields. Our daughter passed 9th class but we made her leave school to help us work in the fields, get water and do the housework."

Vulnerability of Indigenous Women

Indigenous peoples are arguably among the most vulnerable populations for a complexity of reasons. Most notable is their substantial dependence on natural resources, making them vulnerable to changes in the quality and quantity of natural resources. The indigenous peoples of Asia face additional challenges as they are often discriminated against and live in excluded communities in Asia (IFAD 2002). They are frequently absent from decision-making processes, and the ecological systems upon which they depend are increasingly controlled by non-indigenous peoples and corporations.

The 2006 Human Development Index (HDI) for Scheduled Tribes (adivasis) in India shows that their HDI is about 30 percent below that of all-India and, on an international scale, they would fall among the poorer countries of Africa (Sarkar et. al 2006). They are subject to displacement in

the name of development projects from which they derive little or no benefit. Often they are subject to legal discrimination, like in peninsular India, where they are subject to non-judicial forms of punishment and imprisonment. Due to very limited access to education, health facilities, new technologies, agricultural inputs, credit and infrastructure development, their economies have remained virtually cut off from the country's economic growth and technological development. A 2006 study by DFID and the World Bank draws attention in particular to the socio-economic exclusion of dalit (lower castes) and Janjatis (indigenous peoples) in Nepal from access to assets, services, voice and agency. As a result, indigenous communities can suffer from chronic problems of extreme poverty, insurgency, violence, discrimination and plunder of material resources by external actors and forces of

privatization and globalization.

While not diminishing the impact of these conditions on indigenous men, attention is required to the compounding factors women experience, which contribute to their further disempowerment. Gender—characterized by differences in traits and attributes—commonly transfers into differences in power including unequal access to resources, opportunities and development. These gender-based power relations are often produced and sustained to serve specific interests and values of the dominant groups of people and/or communities.

Poverty among indigenous women and, thus, their vulnerability to climate change is attributable to these same relations of gender and power embedded in the structural inequalities of larger social, political and economic institutions that determine, inter alia, legal rights and ownership,

customary and religious practices, and economic, business and livelihood options. Among adivasi women, for example, access to land, credit, and resources can be further restricted than the already limited access to indigenous peoples on the whole, and they may experience inequality in the market and workplace even within their communities, all of which exacerbates poverty—a pattern which will be explored more fully in the chapter 4.

Traditionally, adivasi/indigenous women have played an important role in preserving their cultural heritage, including managing local resources sustainably. They have been producers and providers of food for their communities. They have been “the custodians of biodiversity for many of the world's ecosystems and practitioners of medicine, pharmacology, botany, nutrition and keepers of agricultural technology



that sustains poly-cultures critical to maintaining biodiversity” (International Indigenous Women's Forum Declaration, 2005). There is a general agreement, however, among academics and within indigenous communities that these traditional positive roles of women are on a decline.

According to adivasi women in a national conference of adivasis at Ranchi, Jharkhand in February 2007, women's declining social stature within society and growing vulnerability over the past 50 years, can be attributed to the following: (1) increasing erosion in women's use and control rights to land and housing; (2) lack of access to new technologies and agricultural extension services; (3) human insecurity and displacement; (4) lack of participation in decision-making processes on use of community resources (forests, pastures, water); and (5) inadequate knowledge and control over marketing (GLRF, 2007:4-5). These are aggravated by lack of attention to such issues in development and the lack of infrastructure, including communication

information technologies, in women's communities and personal lives.

In Asia, this has contributed to many adivasi women living at the margins of society. They “suffer from multiple discriminations both as women and as indigenous individuals. They are subjected to extreme poverty, trafficking, illiteracy, lack of access to ancestral lands, non-existent or poor health care, and to violence in the private and public sphere” (GLRF& CWLR 2006:20). These result in a complex web of severe constraints that increase women's poverty making it difficult to overcome, among other challenges, the impact of natural hazards and environmental stress to their lives and livelihoods.

Lucky Sherpa (currently a Member of Parliament, Nepal) succinctly said, “Indigenous women, in their day to day struggle for livelihood experience a triple discrimination: as women in Nepal, as members of the indigenous community, and as women of the indigenous community” (Kelkar,



Restructuring of Indigenous Economies & Gender Relations in Asia

Indigenous capabilities for management of natural resources and preserving biodiversity have been evident for centuries. While there are theories that exhaustive resource use and exploitation by some ancient (considered indigenous) societies contributed to their collapse, resource management by the majority of small-scale indigenous societies has been ecologically balanced (Kalimantan, Langub, 1996). This balance, however, has been challenged during various historical attempts by ruling regimes and corporate agents to control natural resources and, in turn created a new geography of power that gave rise to normative orders beyond the indigenous collectivity, rupturing the remnants of dignity associated with indigenous culture and knowledge.

Indigenous people's relationship to the natural environment was significantly altered by the restructuring of political economies, with significant impact on women. When forests were under local indigenous control, particularly in matrilineal societies, women played an important role in forest-based production of goods and often enjoyed high status based on their knowledge of flora and fauna and their role in religious rituals with strong ties to the forest. While women certainly continued to use forests after state centralization, they often had to do so clandestinely and in short visits. In addition, many forests were cut and replaced by mono-crops that provided few of the resources that women previously controlled and utilized. With limited access to a much altered forest, women's power and value in the community was reduced.

More recently, women's access to land and other productive resources have been declining due to privatization—a system which favors the elite, enabling them access to resources and education

at the exclusion of others. This has affected even matrilineal communities, like the Khasi and Jaintia in Northeast India where women have decreased access to productive resources, yet they continue to bear the principal responsibility for household food security (Kelkar, Nathan and Walter, 2003; Nathan and Kelkar, 2004; Kelkar 2008). This gender-based household responsibility burdens women to look for other and additional means of livelihood, including those that increase their risk of violence, human trafficking, and sexual exploitation. This risk is further heightened by widespread illiteracy, familial and social violence, and restricted livelihood options.

To this day women are more vulnerable and more excluded than men even among the excluded groups of adivasi and indigenous peoples. Like the caste Hindus, adivasis and indigenous peoples in Nepal have social norms governing gender relations that reinforce women's inequality, subordination and dependency. Women's access to and control over land—the primary means of production traditionally—is dependent for example on their relation as a daughter, wife or mother to a land-owning man.

Nevertheless, these vestiges of hierarchical arrangements are increasingly questioned by civil society and new forums of dialogue on human rights by non-state actors, including the United Nations Permanent Forum on Indigenous Issues (UNPFII) and are challenged by the increasingly significant role of non-governmental organizations in the establishment of global norms. In multiple ways these actors and forums are influencing the formalized apparatus of politics, redefining the scope of human rights, and involving hitherto commonly excluded women and men. This socio-political dynamic shows that “excluded norms and actors are one of the factors in the making of

history, even though they only become recognized when formalized” (Sassen, 2006: 279).

Impact of Privatization and Globalization

Most recently, the additional pressures of privatization and globalization of the world's economy have shifted power further away from indigenous peoples within their local economies and strengthened the authority of non-indigenous peoples. This integration of adivasi communities into modern socio-economic systems has led to significant changes in the nature of overall social, economic and, ultimately, gender relations (Nathan and Kelkar, 2004; Mukhim, 2008):

- Privatization of common properties and productive resources—mainly land, forests, and water bodies limits public access;
- Production increases for sale in the public market, as compared to earlier forms of production for self-consumption;
- The growing dominance of men in community management, ownership and control of land and forests;
- Large-scale involvement of women in agricultural production, including livestock, fisheries and non-timber forest products (NTFPs), a phenomenon called the feminization of agricultural labour;
- Separation of land from labour. Labour no longer providing a claim to land and the ability to claim land without labouring on it;
- The gradual or rapid decline of NTFPs in the unregulated commons (community forests with free access to use);
- Domestication and shift of valuable NTFP species into the home gardens or privately-owned fields;



- Few remaining community or sacred forest groves and village forests—used to maintain the church and support the poorest—are small, shrinking and deteriorating in quality, stressed by increasing demand and limited resources;
- The growing atomization of households and individuals, as compared to earlier forms of social reciprocity, e.g. mutual exchange of labour and support for human and economic security; and
- Traditional institutions of community governance eroded by an inability to adapt to or overcome new and technological challenges.

The market-driven processes affiliated with privatization affect indigenous women and men differently, and unfortunately has not mitigated the decline in indigenous women's socio-economic position, but arguably exacerbated it. For example, women's increased involvement in agriculture, fishery, forests and livestock has not resulted in

increased ownership or control rights to such livelihood resources and their produce. Women's work in management and processing of NTFPs from home gardens for sale in public markets have not led to their visibility as farmers or decision-makers of the community economy. And the atomization of the household—compounded by the emigration of men and increased role of women in agricultural production—has made many adivasi women responsible for virtually all household sustenance (production, care and provision of food) while also depriving them of day to day support from other members of the community.

It would be simplistic and misleading to state that the erosion of indigenous women's position in their communities is caused solely or even collectively by colonialism, privatization, globalization or environmental stress due to climate change. The interdependency of changes in economic practices and gender equality is complex. Nonetheless, these factors undeniably contribute to the complex pattern of constraints



indigenous women presently face. This complexity is illustrated in the following observations of non-timber forest products (NTFPs) harvesting in India.

Non-Timber Forest Products

A 2004 field study in Meghalaya and Bastar Chhattisgarh, India, found that most non-timber forest products (NTFPs) for sale in the local market come not from forests, but from home gardens or swiddens (Nathan, 2004). Valuable trees, such as tamarind and mahua, are increasingly planted in domestic areas—the swiddens, gardens, orchards, or other places within community settlements. The cause, cited earlier in a 2000 extensive survey of NTFPs, is attributed to the commercialization of NTFPs and the resultant tendency for common property systems to be privatized, limiting access. The trend is so prevalent the authors state, “increased commercialization of NTFPs is likely to lead to a

breakdown of common property systems” (Neumann and Hirsch, 2000, 43).

There is an additional observed correlation between privatization of forests, and loss of biodiversity due to divergent values of NTFPs and their management. Corporate forest management in Asia often leads to mono-cropping or the intensive production of the species—a condition conducive to larger-scale commercial harvesting. It effectively discourages rotational cultivation and has serious implications for the survival of traditional, staple varieties of crops. A study of the impact of the Sloped Farmland Conversion Programme on agro-biodiversity in Dulongjiang, China, reported that since commercialization, many crops and varieties that used to be planted in the swiddens have basically disappeared. The survey identified 49 crop varieties and of these 5 seed varieties have totally disappeared; the seeds of 17 varieties are planted by very few households; and the seeds of 8 varieties are



regularly planted. The remainders are no longer planted. Biodiversity is at further risk, as many of the varieties whose seeds still survive can only be planted in swidden fields and many of these will lose their viability if they are not planted regularly (ICIMOD Tebtebba-IFAD, 2007).

Use of forests by smallholders, women or men, does not jeopardize biodiversity. Smallholders use the forest not only for commercially valued species but also for those species that have local value. Furthermore, being aware that their livelihoods depend on forest resources, adivasi and indigenous peoples are arguably more likely to maintain high plant variety as well in the structure of forests managed by them.

It is worth noting, however, that this is not always the case. A number of adivasi communities have been attracted by the growing market and have turned large tract of original forests into broom

grass plantations, thereby shifting their traditional subsistence farming strategies to accommodate cash crops to generate income for the household (Mukhim, 2008). Other attempts to democratize control over NTFPs have also had problems. Various Joint Forest Management (JFM) projects in India that aim to institute village-level control over access to NTFPs, have found this difficult to implement; social sectors depend on forest products to varying degrees, leading to inequity in harvesting and use. In addition, those in better-off socio-economic sectors and those relying less on forest resources for income, can very easily decide to set aside areas of forest for regeneration. The issue of deforestation, mono-cropping and biodiversity is therefore complex, since there are demands by communities for food security as well as other income for additional subsistence needs, and processes are influenced by power relations between socio-economic groups.



Field visits by the author to India and China in 2006 and 2008, and decades of development work with women, reveal that in many cases indigenous women bear the burden of gender discrimination as well as the brunt of changes to their environment. This is evidenced when examining their ownership and control of resources, participation in decision-making processes, production of goods, gender roles in the household and local economy, and in unfortunate extremes, women's risk of gender-based violence.

Ownership and Control of Resources

Devolution of forest management out of community hands and into private companies or individuals has resulted in greater socio-economic disparity in many forest societies. Income generated from forests and power has accumulated under local elites, who have commonly excluded women and the poor from usufruct, ownership and control rights to land and forests. Hence, forest-based adivasi and indigenous societies have in many cases experienced deepened gender inequalities (Kelkar and Nathan, 2003).

Among the matrilineal Khasi, for example, women's status has traditionally depended on their claim to and ownership of ancestral property. Women's ownership of land, however, is no longer the determinant feature of the Khasi property system, in large part due to privatization. In some villages, formerly community-owned forests are not deemed to constitute 'ancestral property' in the process of registration as private lands. Instead the land may be deemed 'self-acquired' property, the right to which is governed by different principles and controlled by men who legalize ownership. In other villages, however, forests were privatized and the land was divided and distributed to those whose lands or households were adjacent to the

forest, and titles given in the names of women and men (Nathan, 2004).

As important as the legalities of ownership, control rights to resources have been changed in land and forest management. In the traditional systems of Khasi, Jaintia and Garo in India, and Mosuo in Yunnan, China, for example, women's ancestral property was managed by her uncle or brother. The direct role of the maternal uncle or brother remained even after the men married into other clans. This was possible since marriages often took place within the same village. But, increasingly husbands are effectively managing land and forests, as well as the capital they generate—a key economic resource for households. This capital, however, may also be deemed 'self-acquired property' and is passed on from father to son, bypassing the traditional matrilineal economic system. While women in land-holding Khasi families are in a better position than if they were completely propertyless, the rise of the timber industry has enabled men, as husbands, to increase control of the family's economy.

In landless Khasi families, the main source of cash income is wages from logging, which are typically earned and controlled by men and has contributed to very strong male domination in these households (Nathan, 2004). During field visits in 2006 and more recently in 2008 in Jharkhand, Chhattisgarh and Andhra Pradesh, India, women often cited threats by their husbands—including beatings and expulsion from the house—were their husbands to demand but be denied money for liquor. The women, without claim to land or the house, had little with which to bargain. Comparatively, being thrown out of the house is something that a house-owning Khasi woman is not likely to be subjected to (Kelkar, 2008a).

The Nagas, on the other hand, are patrilineal communities where women have no inheritance rights over land or housing. Nonetheless, women have significant influence in the economy as a consequence of their important role in agricultural production, their central role in the sale of agricultural commodities, and their cash earnings through shawl weaving (Nathan, 2004). This forms the basis of their relatively high position in Naga society.

Community Decision-Making and Power in the Marketplace

Among adivasi, women can be even further marginalized within their traditional institutions as they often have little representation or voice in village councils. While amendments to India's constitutional in the 1990s in India, which decentralized governance like the Panchayati Raj Extension to Scheduled Areas (PESA), provide that women shall have one-third reservation in local government institutions, this has not been implemented in a number of states of India, and less so in adivasi areas. Male leaders in adivasi communities defend practices that exclude women from decision-making in the communities, even in matrilineal communities like Meghalaya in India, and Mosuo in China, where women are excluded from the village councils.

Patricia Mukhim—a Khasi woman activist and journalist—observed that the recent introduction of formalized village management of the economy, which reinforces men's role as community managers enables them to limit women's participation in community-level decision-making processes regarding natural resource management, including management of forests. Mukhim also attributes this control by men to the establishment of once fallow lands as village reserved forests, and the associated flow of funds into the village through projects like the IFAD-funded Northeast India Natural Resource Management Project, which has also served to increase men's control over the economy—even though their knowledge of the local economy is

limited since they neither play much of a role in production nor in marketing of agricultural produce (Mukhim, 2000).

These power relations bleed easily into the marketplace. In Khasi and Jaintia Hills in Meghalaya, India, for example, adivasi women are frequently at the mercy of more powerful traders who control the movement of goods in the market and women may lose a lucrative enterprise, passed on to male hands because of women's exclusion from markets. Compounding this, subsistence and bartering roles of women are increasingly devalued with the expansion of market structures. Notable exceptions are in the wool-based enterprises of some mountain communities, such as in Uttarakhand, India, where they are moving into monetary economies.

There are, however, examples of advances in adivasi women's empowerment. In East Khasi Hills villages, Meghalaya, for instance, a number of cases were reported in recent years where Khadduh—the youngest daughter who is traditionally obligated to provide support and succour to all members of the family—has asserted her claim to full ownership and management rights of her parental property in order to ease the burden of this responsibility. These claims were made in response to efforts by the uncle or brother of the Khadduh to claim the family income and/or trees for his personal benefit.

Another example lay in the initiative of a forest cooperative women leader—Kalavati Devi. While president from 1996-2000 of the Primary Forest Produce Cooperative Society (PFPCS) in Bajawand block of Bastar District, India, Kalavati led a reform of the cooperative policies that govern distribution of harvesting allocations and payment for tendu leaf, commonly used in Bidis or hand-rolled cigarettes of India. Harvesting allocations, granted via 'collection cards', were traditionally provided to the male head of household, even if the woman was the primary collector of the tendu leaf. After much political

bargaining the policy was changed so the collective's member (i.e. the person, typically a woman, who harvested the tendu leaf) would be allocated the card as well as the related payments. As a result women are better positioned to control the income from tendu leaf sales, household savings were reported to have increased, and women gained influence over the cooperative's decisions on sale conditions of tendu leaf. These policy changes spurred growth of the cooperative and the participation of women members in particular who had the opportunity to regain some of their lost control over forests, and over their own livelihoods.

The weakening of traditional norms among adivasi and indigenous peoples, along with the growing visibility of women in the marketing of agricultural products and in the public sphere overall, angers some men who call for women's return to domesticity. On the other hand women who, having grown familiar with new gender roles and realizing the loss of control over land and other productive natural resources are increasingly demanding autonomy and independence. This underlying social context should be understood in cases where women suffer gender-based violence, including the continued and in some areas

increased violence against women in forest areas of Asia—such as demonizing of women as witches and witchcraft persecution (Nathan, Kelkar and Yu 1998; Toppo 2008; Bosu-Mullick 2008).

“We cannot give birth to land. If men sell the land for plantations, where must our children live?”

A West Papuan Woman participating in 3rd Congress of AMAN, Jakarta, Indonesia, June 2007 (Tebtebba 2008: 76)

In sum, these observations of loss of control by adivasi women over natural resources and the compounding loss of relative power in relation to men, can be largely attributed to four significant constraints: (a) interventions from outside the community—such as colonization, privatization, and globalization—which have by and large been extractive and exploitive; (b) fragility of adivasi's economy and production structures; (c) weakening of traditional institutional mechanisms which could mitigate the damage; and (d) as is typical in gendered relations, a power differentiation between women and men reinforced by social, economic and political structures, whereby women have restricted voice and efficacy in community affairs, as well as limited and often



Agriculture: A Lens for Mitigation and Adaptation among Adivasi Women

In Asia, women constitute approximately 70 percent of the agricultural labour force and perform more than 70 percent of farm labour, though it varies by country and region. In India, for example, women constitute approximately 50 percent of agricultural and livestock workers. The country's 2001 census data states that 39 percent of the total workers in agriculture (cultivators and farm labour) are women, and 23 percent in the category of 'other workers' related to fishery and livestock are women. A general pattern throughout Asia however, is the poorer the area, the higher women's contribution—largely as subsistence farmers who work small pieces of land of less than 0.2 hectares (IFAD, 2002; Kelkar, 2007). While the rate of feminization of agricultural labour differs across regions, it reflects common circumstances—the increased employment of women on a casual basis in small unregulated workplaces—and the common causes of distress emigration of men for better paid work in agriculture and non-agriculture sectors, and/or the relegation of less profitable crop production to women (Sujaya, 2006:5).

Indigenous communities of Asia are not immune to the feminization of agricultural work. As is seen worldwide, these women are the chief producers in the swidden fields and the home gardens, holding responsibility for choosing planting seeds and locations, weeding, fertilizing, processing of the produce, and so on. It is Adivasi and indigenous women's very reliance on natural resources and agriculture that make them exceedingly vulnerable to climate change, especially as they often live among the world's most poor with limited access to resources. In Nepal, for example, large-scale emigration of men has left women as de facto farm managers. Yet effective management by women is constrained by women's inability to access credit in a timely

fashion, if at all, since most land titles remain in the men's names and men's signatures are required before credit can be provided. This leads to significant delays in procurement of credit and agricultural inputs, such as fertilizer, with consequential losses to production. As the 2008 World Development Report Agriculture for Development in a Changing World notes, labour regulations are needed that help incorporate a larger share of rural workers into the formal market and eliminate discrimination between women and men.

Three international agreements aim, inter alia, to ensure women's participation in environmental management: (1) the 1979 Convention on the Elimination of All Forms of Discrimination against Women (CEDAW); (2) the 1995 Beijing Platform of Action, and (3) the United Nations Declaration on the Rights of Indigenous Peoples, adopted by the General Assembly in September 2007. Building on these agreements and concerns regarding impacts of climate change on women, civil society—at the 52nd Session of the Commission on the Status of Women (CSW) in 2008—identified climate change and its gender dimensions as a key current challenge to women's empowerment. In particular the agreed Resolution 21 (jj) on Financing for Gender Equality and the Empowerment of Women, urges governments to “Integrate a gender perspective in the design, implementation, monitoring and evaluation and reporting of national environmental policies; strengthen mechanisms and provide adequate resources to ensure women's full and equal participation in decision-making at all levels on environmental issues, in particular strategies related to climate change and the lives of women and girls.” In sum, stakeholders (individuals, civil society, NGOs, and governments) increasingly recognize the growing nexus between two



significant regimes—that which aims to advance gender equality and that which aims to address climate change.

While there is willingness within the national and international communities to invest in agriculture to reduce poverty in the rural sector, the challenge lay in implementing policies that effectively overcome inequality and discrimination against indigenous and women farmers. With the feminization of agricultural work in China, India and other countries in Asia, contemporary rural-urban inequality in these countries is a matter of gender inequality. The persistence of unrestricted violence against women within the home and outside, shows that policy measures to simultaneously reduce poverty and inequality is not a contradiction in terms. This would include policies that foster their ownership and control rights to land and credit; provide access to higher education, technical training and health care; and support their participation in relevant local and national decision-making process and governance.

Transforming the management and ownership entitlement of household resources and building women's capacity can significantly increase productivity, particularly where these resources are under-utilized as with the poor. Furthermore, secure access to and control over natural resources

(land, forests, water and livestock) would make women more able and, likely, willing to make investments in adaptation and disaster risk reduction measures as they would have more invested in their success. In the face of new challenges caused by global warming, this strengthened asset base will be essential for women to cope with strains of climate change.

Mitigation & Adaptation

Mitigation includes efforts that directly address the cause of climate change, such as the emission of greenhouse gases (GHGs). **Adaptation** refers to adjustments in practices, processes or structures to moderate or change the risks of climate change (experienced or expected) and, where possible, take advantage of beneficial opportunities arising from climate change (Lambrou and Piana, 2006). Both mitigation and adaptation measures can be crafted by the international community, states, city municipalities or local communities, families and individuals.

When adaptation measures are taken without governmental directive, they are considered **autonomous adaptation**. Some of these include (Easterling, et al, 2007):

- Changing agricultural inputs, such as to crop varieties with increased resistance to heat, shock or drought; altering fertilizer rates to maintain grain or fruit quality consistent with the climate; and changing amounts and timings of irrigation;
- Harvesting water and utilizing water management to prevent erosion and water-logging in the areas and times of increased rainfall;
- Altering the timing and location of cropping activities;
- Diversifying income by integrating into farming additional activities such as raising livestock; and
- Using seasonal climate forecasting to reduce production risk.

Indigenous peoples have a long record of managing the climate change effects. For instance, Nimi Kumari, a Bohara woman from Banke district of Nepal, explained her strategy to deal with erratic monsoon rains: “As we never know when the rain will come, we had to change. I started to change the way I prepare seedbed, so that we don't lose all our crops. I am also raising different crops depending on the situation ... We also need to use early or short duration paddy and crops that are resistant to baadh (floods) and sukha (drought) if they exist.” (ActionAid and IDS, 2007: 6).

Adaptation Strategies

In November 2008, field observations by the author in villages in Khuti District, Jharkhand, India, indicated a serious impact of climate change on adivasi livelihoods, specifically related to lac production. Women are largely responsible for the production and sale of lac, a natural polymer (resin) produced by a tiny insect, *Kerria Lacca* (kerr) that is cultured on shoots of several species of trees—mainly palas, ber, peepal and kusum. While people's livelihoods in this area are highly dependent on the local Khutkatti forest that are traditionally community managed, as well as paddy cultivation, and livestock. Homestead production of lac is an essential component of

their economy, second only cultivation of paddy according to the Indian Institute of Natural Resins and Gums.

For the past several decades, Lac has been cultivated as a subsidiary source of income by the forest dwelling people in the states of Jharkhand, Chhattisgarh, Orissa, West Bengal, Andhra Pradesh and North Eastern states. India is the highest producer of lac, contributing about 55 percent of the total world requirement, which is now largely used for polishing fruits (to keep them fresh and protect from rotting) and handicrafts.

For the past 3-4 years, however, the lac-host trees (with the exception of kusum in some villages) have been affected by “unseasonal, short and heavy rains, followed by extreme cold weather and week-long fog and frost, around mid-March, when the insect [Kerr] is ready to produce lac.” As a result of the extreme cold (4-10°C), lack of sunlight and frost, the Kerr insects tend to die. This occurred in recent years since 2006, reducing the production of lac to 25 percent of what was harvested in 2004-5. Consequently, the local lac industry Tajna River Industries Private Ltd. has begun importing lac from Thailand (Kelkar, 2008a).

In a meeting with Mahila Mandal—a village women's organization—and the Village Head in Gangyori village of Khuti District, the President of Mahila Mandal said, “You ask me how we are affected by the loss in lac production. We can no longer buy some essential things like vegetables, dal, clothes and so on.... We are trying to meet these shortages in our day-to-day sustenance by cutting and selling wood from the forests. We try to cut only dry and old trees. We also work as farm labour. Our daily wages are Rs.25 to 30, and men get Rs.60 -70.” The village-head added that a number of lac growing trees have been cut down and sold in the market as the trees have become unproductive.

In response, in October, 2008 with the assistance of a local NGO—Professional Assistance for Development Action (PRADAN) with outreach to a large number of adivasi women in the



state—Mahila Mandal members introduced new seed sticks of lac, bought from Chhattisgarh and Andhra Pradesh. In view of the erratic rain and fog in the forthcoming March, however, they are skeptical about the result of these efforts in 2009.

Over time, the community has adapted to these challenges by shifting their livelihoods away from one dependent on (privately-owned) trees for lac production, and towards commercial logging and agriculture. During a 2008 visit to Mookaiwai in Jaintia Hills in Meghalaya, India, it was observed that although subsistence farming is upheld as the social norm, there is in practice a substantial increase of commercial activities, including commercial logging in the communal forest, the use of which is governed by Wahehchnong—an all male community body for decision-making. Furthermore, women and men are both increasingly engaged in commercial production and sale of vegetables.

This transition, however, is not always easy. Sadaka, a farmer, part-time school teacher and mother of a 6-year-old boy, reported on her “new difficulty” over the last 3 to 4 years—the

unseasonal and frequent heavy rains which have adversely affected the production of vegetables such as cauliflower, green peas and beans. “We do not know what to plant and when to plant, as we cannot make out anymore when the rains would end and summer would come,” (Kelkar, Fieldnotes: 2008a).

Unlike in Jharkhand and Meghalaya, however, field visits in 2008 also found circumstances of beneficial climatic shifts, presumably due to global warming—this time in Cordilleras, Philippines. In recent years, the climate has reportedly become warmer in winter months, affecting the mix of crops farmers can grow; Farmers are producing less strawberry and more vegetables (beans, potato, cauliflower, tomato) that can be grown in warmer weather. Even at the higher locations of Baguio, Philippines, the warmer climate is enabling farmers to grow new varieties of vegetables, something they could not do previously. This reinforces that adaptation—to both disadvantageous and advantageous new circumstances—will be critical for communities to remain productive livelihood amid a shifting climate.

Increased Climate Resiliency from Rural Employment Programme

India's flagship rural employment programme has shown some “unusual spinoffs, chief among them reducing the impact of climate change” (Rita Sharma, Secretary, Ministry of Rural Development, Government of India, in Indo-Asian News, February 8, 2009).

One of the distinguishing features of the National Rural Employment Guarantee Act (NREGA) launched in 2006, is the creation of environmentally sound productive assets, under the decentralized administration of gram panchayats or local councils (for details see Kelkar, 2009). NREGA seeks the creation of “durable and sustainable assets” and production methodologies such as water conservation, harvesting and irrigation works; flood control and protection works; drought proofing, including afforestation; renovation of traditional water bodies; land development; and rural connectivity. During the last three years (2006-2008) NREGA has created 4.7 million projects, over 50 per cent of them related to water conservation. For instance, in Sidhi district of Madhya Pradesh, 8000 wells were dug since the launch of NREGA in 2006—and increased the resiliency of the community to drought.

Despite three consecutive droughts in the past three years, water from these wells has made irrigation of fields possible. Likewise, in Karauli district, facing consecutive droughts for four years, the construction and de-silting of 2000 pokhars (village ponds) has reduced distress migration during summer by bringing farmers back to land, particularly in the adivasi belt of central and north India (PRIYA, 2008; Shah, 2009).

More recently, in a discussion on NREGA's multiplier synergy in the current economic down turn in India, it is observed that “demand in the economy is being sustained by rural buying, which has received a boost from NREGA incomes” put into the hands of the poorest of the poor on a massive, unprecedented scale. (Shah, 2009) But these productivity

enhancing measures did not make enough efforts at including adivasi and rural women in planning, management and social audits of employment generation through creation of productive assets.

Autonomous Adaptation

Despite limited support for adivasi and indigenous women to plan and implement adaptation strategies, it is encouraging that in a number of cases adivasi and indigenous women in poor rural areas have autonomously adopted adaptation strategies.

In Jaintia Hills, for example, women vegetable farmers have taken up a new variety of cabbage and cash crops such as turmeric and broom grass, which can withstand unseasonal and heavy rains. Likewise in Ribhoi district of Meghalaya, two women swidden farmers confirmed their traditional major cash crops of beans and karela (bitter gourd) were repeatedly destroyed by irregular and heavy rains experienced over the past 4-5 years. Hence, they have switched to cultivation of new cash crops—ginger and strawberry—which they grow alongside sweet potato, yams, beetroots, carrots, and Chinese turnips in the swidden field, though in smaller amounts. When queried about any difficulties in marketing these new crops, Mirseda Umdor, the older of the two farmers said: “We have no problems in the marketing of vegetables. We are able to sell all kinds of agricultural produce, either in the local market or in Shillong”. To that end, they've also added traditional herbs and fruits grown in their field or backyards to what they sell at market, while providing for household consumption as well.

In addition to ingenuity, these efforts evidence that indigenous women's extensive experience in agriculture as well as knowledge of nutritional and medicinal properties of local plants, roots and trees—including edible plants not normally used—may be of central importance in communities coping with environmental stress and food shortages expected due to global warming.

Worth noting, these autonomous adaptation efforts



mirror similar observations of autonomous adaptation by the International Union for Conservation of Nature (IUCN), who found that in Sikkim, India, for example women farmers have cultivated a new variety of cardamom, which is better suited to the increased frost and fog. And in the Terai area of Nepal, women have also modified seed choice and switched to cultivating crops that can be harvested before the region's floods or plant taller, water-resistant rice varieties have mobilized to better prepare for floods. They've also built community shelters, take their assets and livestock to higher places, and those who have enough resources, increase the plinth level of their houses/homesteads to protect their belongings (IUCN, cited in Bugtong; 2008:11)

These last examples, of simply affording to build shelters or reinforce vulnerable homes evidence the practical link between wealth and capacity for adaptation. While not directly an adaptation strategy, economic resiliency is a cornerstone of effective autonomous adaptation. Therefore, initiatives that directly support women's livelihoods are essential.

Vocations independent of climate

In Bastar, Chhattisgarh, Gond and other areas, adivasi women have developed their skills in traditionally male vocations such as in terracotta, bell metal and wood sculpture. These alternative skills could increase their economic resiliency as the climate shifts, since they decrease women's dependency on agriculture or collection of NTFPs, which global warming is expected to impact negatively or stress in many areas.

In India, self-help groups (SHGs) have been a highly effectual strategy to support women's livelihood and social empowerment. SHGs give market access to women for their non-timber forest products (NTFPs), which include, inter alia, gum karaya (used as medicine and food), maredugaddulu (used in preparing sherbets), narmamidi bark (used in making incense sticks, soapnut (used in soaps and shampoos), pongamia seed (used in hair oils and as a bio-substitute for diesel) and adda leaves (used for making plates). The greatest impact, however, has been the SHGs elimination of middlepersons, minimization of



overhead expenses, and focus on keeping profits within the community. Women's work is moved up the value chain, where they are not only the collectors of forest produce and makers of different products, but also sellers and negotiators for collective purchase of these products in the market (Kelkar and Nathan, 2005; Revelli, 2006).

UNIFEM provided support to this programme from 2005-2008 in partnership with the Kovel Foundation, an NGO based in Visakhapatnam, and the Society for Elimination of Rural Poverty (SERP), an NGO implementing "Velugu," Andhra Pradesh's poverty alleviation programme. It originally focused on Chenchus, a tribal community concentrated mainly in the north-eastern parts of Andhra Pradesh (Mahaboobnagar, Kurnool, and Guntur districts). Since then, however, self-help groups have replicated to more than 700, as of late 2008, in conjunction with 80 nearby Dalit Education Centres, and have over 10,000 members (OM International, 2008).

Social Visibility of Chenchu NTFP Collectors

"Prior to Sangam self-help groups (SHGs) we were socially considered ignorant beings; we did not know how to carry ourselves and to know where a bus was going. Men are listening to us now. Our social prestige has

improved because of our work—such as sustainable extraction of gum karaya, its grading, marketing and managing the procurement centres. People from the neighbouring villages admire us for our ability to do these things, also for our increased income and capacity to deal with the bank and GCC (Girijan Cooperative Corporation). Men no longer order us to do things and where to go and where not to go. Now after Sangam, we have acquired social visibility and social respect."

In a similar vein, adivasi women in Simhachalam, Visakhapatnam district, who have successfully acquired skills in sustainable extraction of NTFPs, its marketing and management said, "Earlier we were called 'mokadura' or drunk ... now we are called 'nokadura', capable of speaking and acting" (Kelkar and Nathan, 2005: 19).

In addition to practical economic advantages of the SHGs, there are components that support social and political empowerment of women as well as they support women as individual and active members of a community, not only in relation to the head of the household. Women involved in SHGs have become known for their knowledge of NTFP processing and marketing, with many receiving training in business

management and negotiation skills. Some have been also trained to share these skills with women and men from other areas. Since SHGs can also provide small loans for women to purchase physical assets such as goats and hens, they help to diversify women's livelihood and have enhanced their social standing in communities. In South India (Andhra Pradesh), Chenchu women reported an increase in their confidence and social visibility, a result of the collective work (Kelkar and Nathan, 2007: 18).

Nonetheless, the self-help groups are limited in their geographic scope and capacity. A recent study of gendered livelihoods of adivasi women in South India noted that while the increasing presence of SHGs has had a positive effect on women in terms of facilitating community participation and income generation leading to increased welfare, they have not—and perhaps cannot—provide enough support for the vast practical needs of adivasi women and men living in extreme poverty and facing severe discrimination (Arun, 2008: 13). Still, they are one of a multitude of strategies that could be supported to strengthen indigenous women's capacity and resiliency, which will be increasingly needed in the face of economic strains due to climate change.

Mitigation Measures

Adivasi and indigenous women may easily have the smallest carbon footprint on earth. Their sustainable livelihood practices such as swidden farming, pastoralism, hunting and gathering, trapping and the production of basic goods and services, often use environmentally friendly, renewable and/or recyclable resources. Adivasis of Jharkhand, Chhattisgarh, Andhra Pradesh and the North-eastern states of India, for example, as well as the Karen and other indigenous peoples of Thailand, China and Myanmar, continue to practice jhum or podu (rotational agriculture), with very limited or no use of petroleum fertilizers. As a result, they not only produce few greenhouse gases, but the conserved forests in



their domain and sustainable use of agricultural lands provide the additional benefit of a healthy ecosystem that helps preserve biodiversity and provides a sink for global greenhouse gas (GHG) emissions (UNFII, Tauli-Corpuz and Lynge, 2008).

Indigenous communities are increasingly interlinked, however, to mitigation initiatives by external actors including forestry projects for sequestering carbon, and the development of alternative energy such as biofuel and wind power. Only limited efforts, however, are often made to include them in consultations and implementation of these projects at any level—local, national, regional, or international. For example, adivasi communities in Harda district in Madhya Pradesh, India, were neither notified nor aware of a carbon forestry project intended to regenerate forests for carbon sequestration and storage. Women however—and in some cases children—were employed on a seasonal basis to plant the seeds in the forest, but were not informed of their role in a larger carbon storage project (Madhu Sarin, 2003 cited in Tebtebba 2008). More concerning to indigenous peoples, some mitigation projects such as securing forests or lands for carbon sinks and renewable energy projects have been established on indigenous peoples' lands through means of deception, and without securing the free, prior and informed consent, particularly of women, of the indigenous community, as in the case of initial years of wind farms by Suzlon in the state of Maharashtra, India.

In other cases, Adivasi women have actively engaged with mitigation projects—to both fight against and collaborate with them, dependent on the circumstances. For example, in response to some renewable energy projects in the state of Maharashtra in India, Adivasi women emerged as leaders to prevent use of their ancestral lands and forests for wind energy farms. In other cases, however, as with the wind energy corporation, Suzlon, adivasi women have collaborated to facilitate the company's corporate social responsibility (CSR) policies, with some appointed as officers on the company's CSR team.

This collaboration is an attempt by Suzlon to understand the ethical basis of land transactions between adivasis and corporate agents, and—in consultation with adivasi women and men—introduce remedial measures for any social, economic or ecological damage resulting from the renewable energy generation. For example, women have requested to maintain access to their grazing land and have electricity and drinking water provided by Suzlon to households located within an area of 2-3 km of wind energy infrastructures. Recommendations were made by adivasi women that these assets be in the name of the women via the SHG collectives, and that all the future transactions and consultations be done with women, since “men drank away all the money gotten from the sale of land to Suzlon. When women get money, it is used for household needs, but when men get money it is used in drinking”. Another recommendation from Mandabai—an Adivasi woman leader of the community in wind-farm village Supa, Maharashtra, India—suggests that Suzlon should provide bicycles to girls enrolled in middle or high school, as an enabling strategy for higher education of girls as part of Suzlon's CSR strategy (Kelkar, Field Notes, 2008c)

More universal recommendations—to benefit all member of indigenous communities equally—is for regulatory payments for the communities' provision of environmental services, including carbon sequestration via avoided deforestation, and the frequently under-valued externalities of watershed and biodiversity protection. This would require an accountability mechanism to ensure that funds are distributed to women and men equitably.

Summary of Adivasi/Indigenous Women's Priorities

IPCC observes that a society's capacity to adapt is influenced by its productive base, including natural and human capital assets, social networks and entitlements, institutions of governance, national income, health and technology (2007:14). Over several years of field visits to indigenous

areas in Yunnan, China, and the states of Andhra Pradesh, Arunachal Pradesh, Chhattisgarh, Jharkhand, Meghalaya and Nagaland in India, women have articulated the following as strategic priorities that can reduce their vulnerability to climate change.

- Ownership and control rights to land, credit, housing and livestock (such as cattle, poultry, fisheries);
- Crop diversification, including flood and drought resistant varieties;
- Extension knowledge in sustainable use of manure, pesticides and irrigation;
- South-south sharing of information on how women and men in other areas are managing their livelihoods and adapting to environmental stressors;
- Capacity-building and training in alternative livelihoods;
- Flood protection shelters to store their assets, seeds, fodder and food for livestock and poultry;
- Easier access to health care services, doctors, pharmacists and veterinarians;
- Access to affordable and collateral-free credit for production, consumption and health care needs;
- Access to markets and marketing knowledge to enhance trade of their agricultural produce and NTFPs with confidence, and not feel nor be cheated and exploited by outside traders;
- Equal participation of women in community affairs, management of community resources and 'the commons', and decision-making

related to negotiating and developing livelihoods and financing of adaptation strategies.

These findings are similar to those of a 2007 study by Action Aid, where rural and indigenous women in South Asia clearly articulate what was required to help them secure and sustain their livelihoods more effectively (ActionAid/IDS, 2007: 4). These included: harvesting and conservation of water in rain-fed agricultural areas (for example, in Jharkhand and Chhattisgarh in India); flood protection shelter for the community to store their harvest and keep livestock during monsoon or unexpected rainfall periods (for example in Bangladesh and parts of Nepal); capacity-building through training and access to information on adaptation strategies, (for example in Nagaland in India); access to new technologies and markets for agricultural-based livelihoods (for example in Andhra Pradesh and North-eastern states India); availability of healthcare, education and financial services; and ownership and control rights to land and the produce throughout the region.

In sum, adivasi and indigenous societies in Asia are often very aware of practical support that would build their economic resiliency and assist them in adapting to ensuing effects of climate change on their livelihood. Women have assumed important roles in demanding that their human rights be respected when state or private sector introduces mitigation projects, and they are beginning to autonomously adapt and lead local movements towards gender responsive economic policies and rights-based initiatives.



Conclusion: Recommendations for Climate Agenda

There is increasing recognition that climate change disproportionately impacts the economically vulnerable, especially in areas at high-risk of natural hazards. Indigenous women are among the most vulnerable as they are among the most dependent on natural environment worldwide. Gender equality and women's empowerment is essential to enable them and all women to adequately adapt to the effects of climate change, as ascribed gender roles often equate to increased hardship. In the particular case of rural and adivasi women, strategies are needed to support their efforts to adapt to climate change. Without such strategies, progress in social and economic development will be limited. (See, for example, "SAARC Nations on Climate Change", in *The Himalayan Times*, Kathmandu, July 9, 2008). As a result, the following are recommended:

1. Deepen future research: More context specific research is needed regarding effective adaptation and mitigation strategies at the local and national level for indigenous communities, especially in the face of the current global food and energy crises. What are good practices or failures of adivasi and indigenous women efforts? What aspects of their own indigenous knowledge have been overlooked and could contribute to effective mitigation and/or adaptation? What barriers exist for women's access to alternative livelihoods in adivasi and indigenous areas? How may access to new technologies, higher level technical education, credit, marketing management, freedom of occupational choice and mobility specifically increase women's capacity to cope with natural disasters and environmental stress? What do adivasi women identify as priorities and strategic needs? Knowledge in these areas can spur innovation and increase the efficacy of policies and programmes. Conversely, the absence

of adequate research in these areas may lead to an absence of, ineffectual, and possible detrimental policies.

2. Strengthen participation of indigenous women and gender experts in climate change planning and decision-making processes.

According to the principle of free, prior and informed consent to access and use of resources in the domain of indigenous populations, adivasi/indigenous women alongside indigenous men should be adequately involved in consultation and decision-making processes in areas that effect their livelihoods. These include, inter alia: forest and agricultural policies and programmes; renewable energy projects such as biofuel production and hydro-electric dams; the establishment of carbon finance mechanisms and their beneficiary policies; biodiversity protection measures; and climate change mitigation and adaptation negotiations at the national and international level.

This participation could be facilitated through the following: (a) Training on projected climatic shifts and impact for specific geographical regions, to build knowledge among civil society, women NGOs and all stakeholders to strengthen their capacity to advocate for specific gender-responsive policies; (b) Consultations to share expertise between indigenous women leaders, academics, scientists, and traditional knowledge holders; (c) Workshops to facilitate South-South sharing of best practices from similarly at-risk communities; and (d) Gender experts in key Ministries and Governmental agencies to assist policy-makers and local institutions involved in disaster risk reduction (DRR) planning. In sum, forums for dialogue (at local, national and international level) should be supported where they exist—as in the current United Nations

Framework Convention on Climate Change (UNFCCC) negotiations, which allows access to civil society actors—and created where they do not. These efforts will help ensure that insights about differentiated impact of climate change as well as differentiated contributions to potential solutions can be shared and consolidated, and indigenous women's knowledge and experience of effective local mitigation and adaptation measures can contribute to more sustainable and responsive climate change policies.

3. Capacity-building for alternative livelihoods:

Access to alternative livelihoods will be essential for communities and individuals to both adapt to climate change and contribute to GHG mitigation. Although the suitability of any alternative livelihood is dependent on the individual and circumstances in which they live, some examples of alternative livelihoods that can both improve indigenous women's livelihoods in Asia and also be resource-wise, include: (a) moving up the value chain of natural resource use (i.e. sustainable

growing or harvesting higher value non-timber forest products such as medicinal plants, fruits, bamboo, and selective tree harvesting in rural and forested areas); (b) employment and self-employment in the information technology sector (in areas such as Northeast India, where literacy rates are higher, especially among the indigenous youth) (c) production of cotton and silk fabric using herbal dyes, and weaving of shawls and other marketable textiles (such as in Chhattisgarh, Rajasthan, and the Northeast in India; Yunnan in China; and indigenous areas in Laos, Thailand and Vietnam); (d) production of artistic work such as terra cotta, wood carving and bell metal sculpture in Bastar, Chhattisgarh; and (e) providing environmental services such as avoided deforestation, regeneration of trees, maintaining and increasing biodiversity, maintaining a clean water supply, and reducing of GHG emissions with adequate payment for these services via clean development mechanisms and other carbon-credit systems.



Recommended support for capacity-building in alternate livelihoods among indigenous women include: (1) Upgrading of traditional knowledge and skills and revitalizing it in areas where it has been lost; (2) Introduction of new knowledge and technologies to support women's access to expanded markets; and (3) Women's unmediated access to resources, including land, housing and credit (not only through the household or the head of the household system). The significance of this last point is readily evident as a means to empower women and increase their economic security as well act as good stewards of the environment. As an example, in China's agriculture system it has been seen that through policies that ensure women's better access to technologies and credit, indigenous women have been more likely to increase efficiency in their use of renewable energy and therefore help mitigate climate change, and more secure access to forest resources has resulted in lower rates of deforestation, and thereby increased forest's carbon sequestration.

4. Implement policies that are responsive to the gender differentiated impact of climate change:

As the international community develops policies and mechanisms to mitigate and respond to climate change, gender mainstreaming will be especially critical in three areas—disaster risk reduction (DRR) planning and implementation at local, national and regional levels; countries'

Nation Adaptation Programmes of Actions (NAPAs); and in the numerous climate funds that are in the process of being established within the United Nations and World Bank to ensure that the projects funded benefit women and men equally. In its entirety, the climate regime will have long-lasting and wide-reaching impact, and therefore needs to mainstream gender at the start and core of its institutions.

While this effort requires significant gender expertise within institutions, and likely gender experts to assist policy-makers, it will reap very practical benefits. A clear example is provided by a 1998 early-warning project in La Masica, Honduras, which contributed to no reported deaths after Hurricane Mitch. Credit was given in large part to gender mainstreaming in hazard management and the early-warning system that was developed and included gender-sensitive training to community members. Possibly not inconsequentially, women once trained, also ran the previously neglected early-warning system (Aguilar, 2004). There is need for similar efforts across the board to increase gender sensitivity on the differential impact of global warming on women and men, and implement mechanisms that identify and spread good examples of local climate change adaptation strategies, especially for South-South learning and among indigenous and rural communities.





References

ActionAid & Institute of Development Studies,(2007), “We Know What We Need, South Asian Women Speak out on Climate Change Adaptation”, London and Sussex.

Arun, Shoba,(2008), “Managing Assets and Vulnerability Contexts: Vistas of Gendered Livelihoods of Adivasi Women in South India”, University of Manchester/ Brooks World Poverty Institute, Working Paper 32, March.

Aguilar, Lorena,(2004) ”Climate Change and Disaster Mitigation in CIDA (Canadian International Development Agency): Gender Equality and Climate Change: Why consider gender equality when taking action on climate change?”, Quebec, www.cccsu.org.cn.

BRIDGE / Institute of Development Studies,(2008), “Draft, Gender and Climate Change: Mapping the Linkages, A Scoping Study on Knowledge and Gaps”.

Bosu-Mullick, Sanjay,(2008), “Demonization of Women as Witches in the States of Jharkhand and Chhattisgarh, India” A study for UNIFEM, South Asia Office, New Delhi.

Bugtong, Maribeth,V., (2008), “Asian indigenous Women and Climate Change” in Asian Indigenous Women: Responding to Climate Change, issue no1, Asian indigenous Women Network (AIWN), Baguio, Philippines.

DFID and World Bank, 2006, Unequal Citizens: Gender, Caste and Ethnic Exclusion In Nepal: Summary. U.K.

Easterling, W.E, P.K. Aggarwal et.al.,(2007), “Food, Fibre and Forest Products, in Climate Change 2007: Impacts, Adaptation and Vulnerability”. Contribution of Working Group 11 to Fourth Assessment Report of Intergovernmental Panel on Climate Change, M.L Parry, O.F. Canziani, J.P. Palutikof, P.J. Vander Linden and C.E. Hanson (eds) Cambridge University Press, 2007. 273 – 313.

Gender, Livelihoods and Resources Forum (GLRF) & Consult for Women and Land Rights (CWLR),(2006), Establishing Women's Resource Rights Agenda in Tribal Community. Ranchi.

Gender, Livelihoods and Resources Forum (GLRF),2007, Security of Land and Livelihoods of Adivasi Women, Ranchi

Government of India (2008), National Action Plan on Climate Change, Prime Minister's Council on Climate Change, New Delhi.

Himalayan Times,(2008). “SAARC Nations one on Climate Change” by Farid Ahmed. SAARC member countries are: Afghanistan, Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan and Sri Lanka, Kathmandu, Nepal,July 9.

International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD),(2009), Agriculture at A Crossroads, The Island Press, Washington DC.

International Union for Conservation of Nature(ICUN),Gender and Climate Change, Penned by Lorena Aguilar, Ariana Araujo, and Andrea Quesada–Aguiliar, www.genderandenvironment.org

International Union for Conservation of Nature(ICUN),(2008), Indigenous and traditional Peoples and Climate Change: Issue Paper,(Lead author: Mirjam Macchi).

International Centre for Mountain Development (ICIMOD-Tebtebba- IFAD), (2007),”Sloped Farmland Conservation and Agro-biodiversity Programme, Summary by Xiao”, Unpublished Report.

Indo-Asian News, (2009), “India's rural job scheme also addressing climate change,” February 8.

Intergovernmental Panel on Climate Change (IPCC), (2007), Climate Change 2007: Synthesis Report. Summary for Policy Makers. IPCC and Cambridge University Press.

International Indigenous Women's Forum Declaration,(2005), New York, February.

International Trade Centre (ITC), (2007), Organic Farming and Climate Change. Doc. No. MDS-08-152E. Geneva, ITC.

International Fund for Agricultural Development (IFAD), (2002), Review of Poverty: Asia and the Pacific, Rome, IFAD.

International Fund for Agricultural Development (IFAD), 2002, Strategic Framework for IFAD (2002-2006) Enabling the Rural Poor to Overcome their Poverty, Rome March 2002, <http://www.ifad.org/gender/policy/action/htm>.

International Fund for Agricultural Development (IFAD), (2009), Research and Innovation for Smallholder Farms in the Context of Climate Change, Discussion Paper for Roundtable 3, IFAD Governing Council, Rome.

Kelkar, Govind, (2007), "The Feminization of Agriculture in Asia: Implications for Women's Agency and Productivity". A paper presented at an international conference in Swoon, South Korea. October 2007;

Kelkar, Govind, (2008a), Field Notes in East Khasi Hills and Jaintia Hills, Meghalaya;

Kelkar, Govind, (2008b), Field Notes in Khuti, Jharkhand;

Kelkar, Govind, (2008c), Field notes in Suzlon Wind Farm, Supa, Maharashtra, India.

Kelkar, Govind, (2009), "Gender and Productive Assets: Implications of National Rural Employment Guarantee for Women's Agency and Productivity," paper prepared for FAO-IFAD-ILO Workshop on "Gaps, trends and current research in gender dimension of agricultural and rural employment: Differentiated pathways out of poverty," Rome, March 31 – April 2, 2009.

Kelkar, Govind and Dev Nathan, (2005), Chenchu Women of Andhra Pradesh, India; Empowerment in the Market and Household, Study for UNIFEM, New Delhi.

Kelkar, Govind. Dev Nathan and Pierre Walter eds., (2003), Gender Relations and Forest Societies in Asia: Patriarchy at Odds, New Delhi, London and Thousand Oaks, Sage Publications.

Lambrou, Yianna and Grazia Piana, (2006), Gender; The Missing Component of the Response to Climate Change, FAO, Rome.

Langub, Jayl, (1996), "Penan Response to Change and Development" in Padoch, Christine and Nancy Lee Peluso eds. 1996, Borneo in Transition: People, Forests Conservation, and Development, Oxford University Press, New York.

Padoch, Christine and Nancy Lee Peluso eds. (1996), Borneo in Transition: People, Forests Conservation, and Development, Oxford University Press, New York.

Michaelowa, A., (2001), "Mitigation versus adaptation: the political economy of competition between climate policy strategies and the consequences for developing countries", Rome.

Mukhim, Patricia, (2000), "Gender Assessment of IFAD Projects in West Khasi Hills", Unpublished Report.

Mukhim, Patricia, (2008), "Retrieving, indigenous traditional practices of Khasi indigenous Tribes of North East India", Unpublished Report.

Nathan, Dev, (2003), Adivasi Development in India: Lessons from IFAD projects in Andhra Pradesh, IFAD, Rome.

Nathan, Dev, (2004), "Northeast India: Market and the Transition from Communal to Private Property", in Nathan, Dev, Govind Kelkar and Pierre Walter (eds.), Globalization and Indigenous Peoples in Asia: Changing the Local-Global Interface. New Delhi, London and Thousand Oaks, Sage Publications.

Nathan, Dev, Govind Kelkar and Yu Xiaogang, (1998), "Women as Witches and Keepers of Demons: Cross-Cultural Analysis of Struggles to Change Gender Relations," in Economics and Political Weekly, Vol. XXXIII, No. 44.

Neumann, Roderick and Eric Hirsch, (2000), Commercialization of Non-Timber Forest Products: Review and Analysis of Research, Bogor, CIFOR.

Nelson, Julie A. (2007), Economists, Value Judgments, and Climate Change: A View from Feminist Economics, Working Paper NO 07, Global

Development and Environment Institute, <http://ase.tufts.edu/gelae>

OM International,(2008), “Increase of Self Help Groups”, <http://www.om.org/resource/r14038>.

People's Republic of China, (2007) China's National Climate Change Programme, National Development and Reform Commission, Beijing.

Porodong, Paul,(2003), “Bobolizan, Forests and Gender Relations in Sabah, Malaysia” in Kelkar, Govind. Dev Nathan and Pierre Walter eds.(2003), Gender Relations and Forest Societies in Asia: Patriarchy at Odds, New Delhi, London and Thousand Oaks, Sage Publications.

PRIYA,(2008), Role of Panchayati Raj Institutions in Implementation of NREGA, National Study: Phase III, New Delhi.

Revelli, Usha,(2005), ”Taking on the Market”. Women's Feature Service and UNIFEM.June. http://www.unifem.org/gender_issues/voices_from_the_field/story.php?StoryID=235

Stern, S.N.(2006), Stern Review on the Economics of Climate Change, HM Treasury, London.

Sarkar, Sandip, Sunil Mishra, Harishwar Dayal and Dev Nathan,(2006), “Development and Deprivation of Scheduled Tribes”, Economic and Political Weekly, 18 November.

Sassen, Saskia,(2006), Territory, Authority, Rights, From Medieval to Global Assemblages, (Updated edition) Princeton and Oxford.

Scialabba,Nadia, (2000), “Opportunities and Constraints of Organic Agriculture Policies with a focus on Developing countries, FAO, Rome.

Sen, Amartya, (1981), Poverty and Famine, Oxford, Clarendon Press.

Shah, Mihir (2009) “Multiplier accelerator synergy in NREGA”, The Hindu, Delhi, April 30.

Sujaya, C.P.(2006), Climbing a Long Road: Women in Agriculture in India:Ten Years after Beijing, M.S. Swaminathan Research Foundation, Chennai.

Stoparie, B., (2007), “Climate Change is a Women's Issue”. Women's eNews, April 8. <http://www.alternet.org/story/38659>.

Tebtebba (Indigenous Peoples' International Centre for Policy Research and Education),(2008), Guide on Climate Change & Indigenous Peoples, Baguio, Philippines.

Toppo, Punam,(2008), “Mass Sensitization on Witchcraft and Minimizing the case of Witch hunting in Jharkhand State by 50 percent within Six Years”, a Study for UNIFEM, New Delhi, Unpublished.

United Nations,(1980), Convention on Elimination of all Forms of Discrimination Against Women (CEDAW).

United Nations Development Fund (UNDP), (2008), Poster; Countering Climate Change, New Delhi.

United Nations Development FUND (UNDP), 2007-2008, Human Development Report: Fighting Climate Change: Human Solidarity in a Divided World, New York.

United Nations Development Fund for women (UNIFEM), (2008), Concept paper on Climate Change and Gender, New York.

United Nations Permanent Forum on Indigenous Issues(UNPFII), (2008), Seventh Session New York. 21 April – 2 May. United Nations Economic and Social Council, “Impact of Climate Change Mitigation Measures on Indigenous Peoples and their Territories and Lands”, submitted by Victoria Tauli-Corpuz and Aqqualuk Lyngé.

Vepa, Swarna, 2007, “Feminization of Agriculture and the Marginalization of Women's Economic Stake” in KrishnaRaj, Maithreyi (ed), (2007), Gender, Food Security and Rural Livelihoods, Stree, Kolkata.

Women Environment and Development Organization (WEDO),(2008), “Gender, Climate Change and Human Security, Lessons from Bangladesh, Ghana and Senegal” A Study in collaboration with ABANTU for Development in Ghana, Action Aid Bangladesh and ENDA in Senegal.

World Bank, (2008), World Development Report; Agriculture for Development in a Changing World, Washington D.C.

UNIFEM is the women's fund at the United Nations. It provides financial and technical assistance to innovative programmes and strategies to foster women's empowerment and gender equality. Placing the advancement of women at the centre of all of its efforts, UNIFEM focuses its activities on four strategic areas:

- Strengthening women's economic security and rights;
- Ending violence against women;
- Reversing the spread of HIV/AIDS among women and girls;
- Achieving gender equality in democratic governance in times of peace as well as war.

UNIFEM was created by a UN General Assembly resolution in 1976, following a call from women's organizations attending the 1975 UN First World Conference on Women in Mexico City.

UNIFEM's mandate is to:

- Support innovative and experimental activities benefiting women in line with national and regional priorities;
- Serve as a catalyst, with the goal of ensuring the appropriate involvement of women in mainstream development activities, as often as possible at the pre-investment stage;
- Play an innovative and catalytic role in relation to the United Nations' overall system of development cooperation. (GA resolution 39/125)

